Prometheus Bound

Summer 2007

Arizona State Forestry employee Gary Riedmiller during initial attack operations on the Madera Fire.

Summer 2007

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Scrapbook

Heat Injuries

HIGH TEMPERATURE + HIGH HUMIDITY + PHYSICAL WORK = HEAT ILLNESS

Heat becomes a problem when humidity, air temperature, and radiant heat combine with hard work to raise body temperature beyond safe limits. Sweat is your main defense. Everyone working in these conditions must understand the importance of staying well hydrated and resting. High heat stress can produce three forms of heat related illness: heat cramps, heat exhaustion, and heat stroke. The mildest is heat cramps. Heat cramps can progress to heat exhaustion and eventually heat stroke (which is a life threatening situation).

HEAT CRAMPS: *Heat cramps are involuntary muscle contractions, typically in the large muscle groups, caused by failure to replace fluids or electrolytes, such as sodium and potassium.*

Cramps can be relieved with stretching and by replacing fluids and electrolytes. Heat cramps can be prevented by maintaining an adequate intake of water, electrolyte replacement drinks, eating fresh fruits and vegetables, and taking frequent rest breaks.

HEAT EXHAUSTION: *Heat exhaustion is characterized by weakness, extreme fatigue, nausea, headaches, wet, clammy skin. Heat exhaustion results when the body produces more heat that it can dissipate. Inadequate fluid intake is a major contributing factor.*

Treat heat exhaustion by resting in a cool environment, by removing clothing so that one's sweat can evaporate, and by replacing fluids and electrolytes.

HEAT STROKE: *Heat stroke is caused by failure of the body's heat controls. Sweating stops and the body temperature rises.*

Although classic teaching describes a heat stroke patient as "hot and dry", recent studies have shown that over 50% of heat stroke patients are sweating heavily. Typically, in the field we do not have medical thermometers. Therefore, the hallmark of heat stroke is altered mental status. You should suspect heat stroke if a person is hot, fatigued, and shows some altered mental status, such as inability to remember the day or the current situation. They may ask, "Where am I?"

Heat stroke is characterized by hot, often dry skin, body temperature above 105.8 degrees Fahrenheit, mental confusion, loss of consciousness, convulsions, or even coma. Heat stroke is a medical emergency. Brain damage and death may result if treatment is delayed. Begin rapid cooling with ice or cold water and fanning the victim to promote evaporation. For rapid cooling, partially submerge the victim's body in cool water. Treat for shock if necessary. Provide oxygen if it is available. Heat cramps and heat exhaustion may be treated locally; heat stroke patients should be medivaced ASAP, as their condition may worsen suddenly.

PREVENTION: *Ensure all individuals know the signs and symptoms of heat-induced illnesses and how to intervene. Perform the heaviest work in the coolest part of the day. Use the buddy system (work in pairs). Drink plenty of cool water (one small cup every 15-20 minutes). Consider replacing a portion of fluid replacement with a carbohydrate / electrolyte sport beverage (such as Gatorade - this will help retain fluids and maintain energy and electrolyte levels). Wear loose-fitting clothing. Take frequent short breaks in cool shaded areas (allow your body to cool down). Avoid eating large meals before working in hot environments. Avoid caffeine and alcoholic beverages (these beverages make the body lose water and increase the risk for heat illnesses). Persons are at increased risk when they take certain medications, have had a heat-induced illness in the past, or they wear personal protective equipment and clothing (i.e. respirators, etc).*

You can assess your hydration by observing the volume, color, and concentration of your urine. Low volumes of dark, concentrated urine or painful urination indicate a serious need for rehydration. Other signs of dehydration include a rapid heart rate, weakness, excessive fatigue, and dizziness.

HEAT INDEX: *To help prevent heat injuries become familiar with the "Heat Index". The* ***Heat Index*** *(HI) is the temperature the body feels when heat and humidity are combined. The chart below shows the HI that corresponds to the actual air temperature and relative humidity. (This chart is based upon shady, light wind conditions.* ***Exposure to direct sunlight can increase the HI by up to 15°F.)*** *By using the two charts listed below you can evaluate the potential injury and take steps to mitigate the hazard before an injury occurs. Note: As humidity and ambient temperatures increase - so does the potential for a heat injury. Think, Act and Work Safely!*

Temperature (F) versus Relative Humidity (%)

°F	90%	80%	70%	60%	50%	40%
80	85	84	82	81	80	79
85	101	96	92	90	86	84
90	121	113	105	99	94	90
95		133	122	113	105	98
100			142	129	118	109
105				148	133	121
110						135

HI	Possible Heat Disorder:
80°F - 90°F	Fatigue possible with prolonged exposure and physical activity.
90°F - 105°F	Sunstroke, heat cramps and heat exhaustion possible.
105°F - 130°F	Sunstroke, heat cramps, and heat exhaustion likely, and heat stroke possible.
130°F or greater	**Heat stroke highly likely with continued exposure.**

References: 6 Minutes for Safety

Standards for Fire and Aviation Operations, BLM
www.fire.blm.gov/Standards/redbook.htm

Fitness and Work Capacity - - Second Edition
NOAA National Forecast Office, Pueblo, CO
www.crh.noaa.gov/pub/heat.php

Three Firefighters die in Greece

Three Firefighters died while operating at a fire in a forest on the Greek island of Crete- the 3 were killed after the fire trapped them in a gorge.
A 4th firefighter was hospitalized with serious burns. The fire started about 1400 hours in a forested, mountainous area outside the city of Rethymnon on Crete's northern coast. Fires have plagued many parts of Greece in recent weeks. Dry conditions were worsened by some of the hottest early summer weather on record.

Fire Shelter Deployments and Burnovers

Angora Wildland Fire Entrapment and Shelter Deployment
Lake Tahoe Basin Management Unit

Preliminary Critical Information:

At approximately 1500 on Tuesday June 26, 2007, two Forest Service Employees were entrapped by a wildland fire and deployed their fire shelters. The firefighters remained in their new generation shelters approximately 30 to 40 minutes while the fire burned around them. Neither firefighter was injured.

Narrative:

On Sunday July 24th 2007 the human caused Angora Wildland Fire was discovered near Fallen Leave Lake south of South Lake Tahoe. Aggressive suppression actions were implemented immediately but under conditions of high winds and critically low fuel moistures the fire spread to approximately 2500 acres and overtook numerous homes and other structures. A type 2 Incident management team, Swartzlander took command of the fire on Monday June 25th. A type 1 Incident Management team, (Hawkins) took command of the fire at 0600 hours on Tuesday June 26th.

During the afternoon of June 26th, the two Forest Service firefighters involved in the deployment were assigned to a Shasta Trinity National Forest type 3 engine. Their engine was assigned to a strike team of engines working with other strike teams to patrol a road that would be used as a containment line that day. Early in the afternoon, winds caused spot fires near the location of the Shasta Trinity Engine. Two members of the engine crew worked to suppress the spot fires as additional spot fires were developing. The two firefighters were approximately 800

feet from their engine when conditions deteriorated significantly with increased winds, spotting and extreme fire behavior. The firefighters tried to escape back to their engine but were cut off by emerging spot fires. The firefighters retreated to a grassy clearing where they deployed their shelters.

On June 27th, 2007, An Accident Prevention Analysis (Peer Review) Team was formed and is currently conducting a comprehensive review of the incident.

Madison Arm Fire Entrapment, Gallatin National Forest, Region 1
June 27, 2007

Preliminary factual findings:

At approximately 1730 on Wednesday, June 27, 2007, two Forest Service engines, a chase vehicle, a contract dozer on a trailer and nine individuals were entrapped by a wildland fire. The firefighters got in their vehicles and waited for the fire to pass. There were no injuries and no vehicle damage.

Narrative:

Early on the afternoon of June 27, 2007, the fire had been sized up at less than five acres. The IC at the time was the initial attack engine captain. Later in the afternoon, after the fire had grown in size and complexity, a type III IC assumed command. Around 1700, resources were directed to the Madison Arm Resort for a briefing. Shortly after the briefing the involved resources were on the Madison Arm Road. They discovered their route to the east was compromised by the fire front. They decided to disengage and escape the fire front by traveling west on the Madison Arm Road only to find that escape route blocked as well. Recognizing that they were in an entrapment situation, they located an area with fine fuels and began a burnout operation. The operation lasted only a matter of minutes before the flame front arrived and they were forced into the vehicles. The crews waited as flame and embers passed over the vehicles filling the cabs with smoke. No injuries were sustained and no damage occurred to the vehicles.

On June 28, 2007, an Accident Prevention Analysis Team was formed and is currently conducting a comprehensive review of the incident.

24 - Hour Report, Shelter Deployment, Black Hills National Forest

Two members of a Black Hills National Forest crew involved in a burnout operation early on July 8, 2007 deployed a shelter when a sudden windshift and increased wind speed, triggered a fire behavior change in flashy fuels. Both

individuals were admitted to the Rapid City Regional Hospital in South Dakota. The first firefighter was released from the hospital after observation and treatment for superficial burns to one side of his face, arm, and lower leg. The second firefighter sustained a superficial burn to his face and first and second degree burns to his knee and both his hands.

The fire as of 12 noon on July 8, 2007 had burned approximately 400 acres on NFS lands and 3,000 acres on private land. The entrapment occurred on private land.

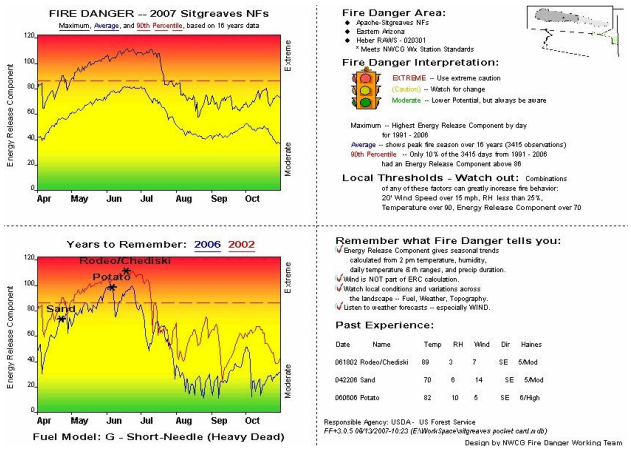
The Washington Office has verbally delegated the accident investigation to Region 2. A serious accident investigation team is being deployed to the Black Hills on July 8, 2007.

Three Firefighters Injured Fighting Wildfire

San Andreas – *At approximately 3:30 PM yesterday, July 7, three firefighters from CAL FIRE/California Department of Forestry and Fire Protection were injured while on the fire line of the Inyo Complex near Independence, California. The firefighters were part of two engines working together. Five (5) firefighters were on one engine and four (4) firefighters on the other, when the fire situation became critical. The firefighters deployed their fire shelters until the fire subsided enough for them to escape. Three firefighters sustained minor injuries and were transported to the Fresno Burn Center by helicopter per CAL FIRE policy. One of the engines was destroyed and one was able to be driven. Six of the firefighters did not sustain any injury. The burn incident is currently under investigation.*

Helpful Links for Out of State Fire Assignments

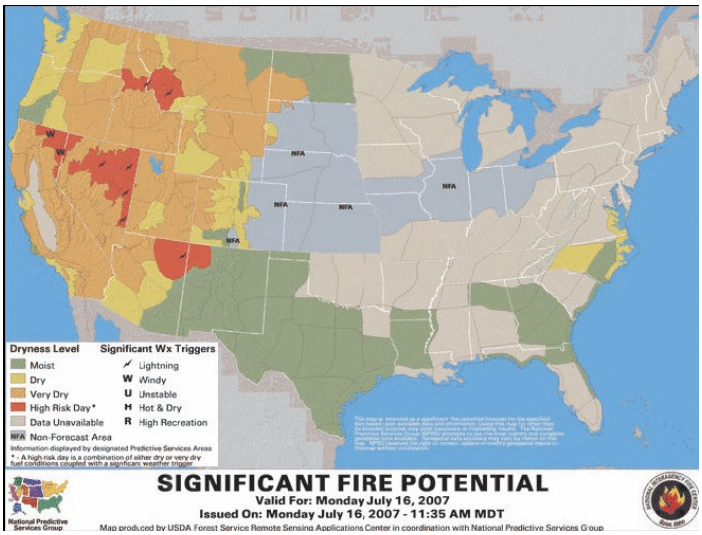
National Pocket Card site - Choose Geographic Area on left and then appropriate agency and unit once at Geo Area page.
http://famweb.nwcg.gov/pocketcards/default.htm



National Fuels & Fire Behavior Advisories Page - Clickable map of all current advisories nationally
http://www.nifc.gov/nicc/predictive/fuels_fire-danger/fuels_advisories.htm

National GACC Web Portal - Access any GACC intelligence page by choosing GACC and then Intelligence along left hand margin
http://gacc.nifc.gov/

Link to National 7-Day Significant Fire Potential maps
http://199.141.1.21/predictive/index.html



Fire Season 2007

As many of you already know, the fire activity in 2007 was somewhat slower than anticipated. A variety of factors including late spring rainfall, the rapid and efficient action of initial attack resources, and ignition locations may be some of the reasons for the relatively slow season.

Summary of the 2007 Fire Season for the State

Through 7/18/07	*Year to Date*	*This Date 2006*	***10 Year Average***
Incidents	*235*	*471*	***722***
Acres	***4,440***	***8,193***	***15,336***

Fire Related Accidents in 2007

The following summary of accidents is based on the best information available at this time, but not all of it has been confirmed. It will be updated as more information is received.

Aviation Resources

- *A BIA S.E.A.T. made an emergency landing on the Pine Ridge Indian Reservation. No injuries reported.*
- *A S.E.A.T. on the Egley Complex nears Burns, Oregon, made an emergency landing. The pilot was treated at a local hospital and released.*

- *On the Zaca Fire in California, a Skycrane helicopter tipped over on take-off. Both pilots received minor injuries.*

Ground Resources

- *Two Forest Service firefighters deployed in one shelter on the Alabaugh Fire in South Dakota. One was hospitalized and the other treated and released.*
- *Entrapment on the Inyo Complex in California of up to nine firefighters and one civilian. Some minor injuries occurred.*
- *Two civilians died on a motorcycle on Interstate 15, near Fillmore, Utah. Smoke from the Milford Flat Fire was a contributing factor.*
- *One state employee died while attempting to protect his home on the Alabaugh Fire in South Dakota. He had been urged to evacuate but chose to try to defend his home and or returned for possessions.*

State Engines 361, 362, and 363

State Engine 361

The fire season for Engine 361 started off slowly. It did not respond to its first fire until June 3rd. By the end of the season it had responded to 8 fires:

Black Knob Fire- a small fire near Bisbee. State Engine 363 also responded.

Sasco Fire- a 40 acre fire on private land just outside the Avra Valley Fire District

Sierra Cobre Fire- fire on the Coronado National Forest, Nogales Ranger District

Lake Entrance Fire- 1 acre fire near the entrance to Patagonia Lake State Park

Indian Wash Fire- a small fire inside the Golder Ranch Fire District

Buena Fire- a fire on the Buenos Aires National Wildlife Refuge

Firefighter Kevin Mckay working to contain a flare-up on the Buena Fire.

Madera Fire- a significant fire just below the entrance to Madera Canyon on the Coronado National Forest. Engine 361 was one of the first units on scene. The personnel assigned on the Engine that day- Todd Foster, Jeff Weger, Gary Riedmiller, and Warren Neff- joined engine crews from the Coronado National Forest on the east flank and stopped the fire from spreading up the canyon. A number of photographs from the Madera Fire appear below:

Madera Fire as E-361 approaches from the north.

Todd Foster scouting a portion of the Madera Fire.

Madera Fire on west side of Madera Canyon Road

The Arizona State Land Department wishes to thank the following individuals for their service on State Engine 361:

Mike McGuire, Arizona State Forestry and Patagonia Fire Department
Todd Foster, Arizona State Forestry and Tempe Fire Department
Jeff Weger, Arizona State Forestry
Gary Riedmiller, Arizona State Forestry
Kevin Bailey, Jr., Arizona State Forestry and Tempe Fire Department
Steve Hulland, Arizona State Forestry and Raytheon Fire Department
Jorge Parra, Arizona State Forestry and Raytheon Fire Department
Warren Neff, Arizona State Forestry and Mescal Fire Department
Chris Bernal, Arizona State Forestry and Mescal Fire Department
Ike Isakson, Patagonia Fire Department
Kevin McKay, Patagonia Fire Department
Joe Gunia, Mount Lemmon Fire District
John Hoellerich, Mount Lemmon Fire District
Mike Godleski, Sun City Fire District
Albert Bandin, Town of Guadalupe Fire Department
Dennis Conwell, Mount Lemmon Fire District
Robert Matthews, Arizona State Forestry and Tempe Fire Department
Peter Norton, Mount Lemmon Fire District
Damien Vrbanic, Mount Lemmon Fire District
Mike Cuestas, Mount Lemmon Fire District
Asa Pallette, Rincon Valley Fire District
Wiley Volz, Patagonia Fire Department
Aarron Schreiber, Patagonia Fire Department
Ian Battles, Mescal Fire Department
Jacob Jirschele, Mount Lemmon Fire District

State Engine 362
This engine was stationed in Oracle and didn't go into service until June 2nd. The engine's primary responsibility was to provide initial attack coverage for the town of Oracle. During its service, the engine responded to three fires:

Indian Wash Fire- a small fire inside the Golder Ranch Fire District

Burns- a 2.5 acre fire in the town of Riverside

Playa Fire- two 1/10 fires, east of Texas Canyon on I-10

The Arizona State Land Department wishes to thank the following individuals for their service on State Engine 362:

Scott Garcia, Golder Ranch Fire District
Mike Muirhead, Golder Ranch Fire District
Kris Croddy, Golder Ranch Fire District
Cameron Hendrix, Golder Ranch Fire District
Robert L. Miller, Arizona State Forestry and Oracle Fire District
Brian Lassen, Arizona State Forestry and Avra Valley Fire District
John Hoellerich, Mount Lemmon Fire District
Nick Brandman, Cascabel Volunteer Fire Department
Joe Gunia, Mount Lemmon Fire District
Damien Vrbanic, Mount Lemmon Fire District
Peter Norton, Mount Lemmon Fire District
Mike Cuestas, Mount Lemmon Fire District
John Hoellerich, Mount Lemmon Fire District
Kevin Bailey, Jr., Arizona State Forestry and Tempe Fire Department
Gary Riedmiller, Arizona State Forestry

State Engine 363
This engine was stationed in Huachuca City and primarily patrolled Cochise County. During its service, it responded to 9 fires:

Whetstone- E-363 provided assistance to the Whetstone Fire District for a structure fire that spread to the surrounding vegetation.

Black Knob- a small fire near Bisbee. State Engine 361 also responded.

St. David- a fire that spread from a burning pile of slash, to a shed and then to the surrounding vegetation.

Not Mule Fire- a 40 acre fire in the Mule Mountains.

Manzora One- ½ acre fire off Dragoon Road

Manzora Three- a 380 acre fire off Dragoon Road

Highway 92 Complex- multiple road side fires on the Coronado National Forest, Sierra Vista Ranger District

Target - BLM fire between Highway 82 and Charleston Road

Whitewater- 1/10 acre fire south of Double Adobe

The Arizona State Land Department wishes to thank the following individuals for their service on State Engine 363:
Jesse Grassman, Arizona State Forestry and Tombstone Fire Department
Allen Hershey, Arizona State Forestry and Bisbee Fire District
Richard Kurzhals, St. David Fire District
Don Gibson, St. David Fire District
Dick Kester, Sunsites-Pearce Fire District
Linda Kester, Sunsites-Pearce Fire District
Terry Porter, Sunsites- Pearce Fire District
Tom Valenzula
Kevin McKay, Patagonia Fire Department
Terry Tingle
Brian Dean
Ana Reed
Chris Bernal, Arizona State Forestry and Mescal Fire Department
Charlie Hill
Chris John
Kyle Lange
Chad Stack
Aaron Sapienza
Dick Baker, Sunsites Pearce Fire District
Loyal Gephart, Jr., St. David Fire District
Jack Ballard, Sunsites Fire District
Raley
Adam Casillas
Josh Brown
Brian Jackson
Rebel Jones, Sunsites-Pearce Fire District
Linda McWilliams, Sunsites-Pearce Fire District
Jack Pock, Sunsites-Pearce Fire District
Warren Neff, Arizona State Forestry and Mescal Fire Department

Burn Over with injury near Jackpot Nevada

The burn over occurred on July 7th, 2007 on the West Basin Fire near Jackpot, Nevada:

Narrative of Events

A Type II hand crew was assigned to the western flank of the West Basin Fire southeast of Jackpot, Nevada. While constructing hotline, the crew boss was scouting ahead of the crew. The crew boss went out of sight of the squad bosses and crew for a short time. Statements from the incident indicate erratic winds were affecting fire behavior in the Fuel Model 2 component. The crew boss radioed the squad bosses that the smoke was impacting his view of the fire and the location of the crew. The crew boss suffered burns to his face, arm and leg while working his way back to the crew. Radio communication indicated that the crew boss had been burned over and was injured. He was flown by a helicopter assigned to the incident to Magic Valley Regional Medical Center and later transported to the University of Utah Burn Center for treatment. He was released July 8th, 2007 to his home unit.

The New versus the Old

An Update on the Fire Shelter Transition

The Old Style Shelter

Background The federal and state wildland agencies began purchasing the new generation shelter in the spring of 2003. At that time, the objective was to phase out the old shelter over a five year period.

The New Generation Shelter

Present Situation *The National Fire and Aviation Executive Board (NFAEB) requested an update on where the agencies were at relative to the transition from the old style fire shelter to the new generation fire shelter from the National Fire Shelter Task Group (FSTG) that is chartered under NFAEB. In addition, NFAEB also requested what options exist for the field relative to the disposal of the old style fire shelters.*

The FSTG presented the estimated numbers outstanding to complete the transition, options for getting the agencies fully transitioned, and disposal options available. The NFAEB does not want the old shelters in the system after the cut-off date so they will be deemed out of service.

Based on the estimated numbers, it appears the federal agencies current transition process will meet the intended target date of January 1st, 2009, but will definitely be completely transitioned by January 1st, 2010. ***January 1st, 2010 is the date which all agencies and cooperators are to be transitioned, as well as any contracted resources.***

States are working with the Forest Service to identify grant opportunities as well as Department of Homeland Security funding initiatives for first responders. As units identify need, they can work with their partners to determine funding options, and then utilize ordering shelters and the training materials either through their servicing National Interagency Support Cache or direct from GSA.

The transition to the new generation fire shelter is expected to be accomplished by January 1st, 2010. However, due to the large number of cooperators there is opportunity for resources to appear on an incident without a new generation shelter. In these situations, the host unit will need to determine the best method to facilitate providing a new generation shelter with training prior to assigning the resource.

Disposal Options for the Old Style Fire Shelters *The following are options available to units for the disposal of the old style fire shelters:*

1. *Recycle- Use the shelters to produce Cabin Wrap (Cabin Wrap can also be used to protect structures, bridges, signs, etc.)*
    a. *Cutting two rectangular pieces from each shelter to produce individual sheets approximately 34 X 70 inches.*
    b. *Cutting two rectangular pieces from each shelter approximately 34 X 70 inches, stitching approximately 51 pieces end to end, and spinning the product onto rolls containing 100 yards.*
    c. *Old Style Shelters could also be used by local units for the following:*

i. *Back country campfire pans.*
ii. *Welding blankets*
iii. *Wrapping coolers and juice troughs at fire camps*

2. *Disposal- Each local unit disposes of their own shelters. The units within a geographic area will work with their servicing National Interagency Support Cache for collection of shelters and the Cache facilitates disposal.*

Radio Frequency Electromagnetic Fields

RF Energy Exposure Awareness and Control Information

The Bendix King Portable Radio is probably the most common communication device used in wildland firefighting. So while the information presented below is somewhat specific to the operation of Bendix-King portable radios, the general principles below can also apply to portable radios manufactured by other companies.

<u>Electromagnetic Energy in the radio frequency (RF) spectrum</u>
From the Owner's Manual for the Bendix King DPH Portable Radio, "This 2-way radio [Bendix King Portable Radio DPH] uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. It uses radio frequency (RF) energy or radio waves to send and receive calls. RF Energy is one form of electromagnetic energy; other forms include electric power, radar, sunlight and x-rays. RF energy, however, should not be confused with these other forms of electromagnetic energy, which when used improperly can cause biological damage. Very high levels of x-rays, for example, can damage tissues and genetic material. The energy levels associated with radio waves from portable 2-way radios, when properly used, are not great enough to cause biological damage.

Experts in science, engineering, medicine, health and industry work with organizations to develop standards for exposure to RF energy. These standards provide recommended levels of RF exposure for both workers and the general public. These recommended RF exposure levels include substantial margins of protection. All 2-way radios marketed in North America are designed, manufactured and tested to ensure they meet government established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of 2-way radios.

These instructions are important because they inform users about RF energy exposure and provide simple procedures on how to control it."

Compliance with RF Exposure Standards

"The BK Radio 2-way radio is designed and tested to comply with a number of national and international standards for human exposure to radio frequency electromagnetic energy. The radio complies with Institute of Electrical and Electronic Engineers and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% transmitting and is authorized by the FCC for occupational use only. In terms of measuring RF energy for compliance with FCC exposure guidelines, the radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode. Note: The approved batteries supplied with the radio are rated for a 5-5-90 duty factor (5% talk-5% listen- 90% listen), even though the radio complies with the FCC occupational RF exposure limits and may operate at duty factors of up to 50% talk."

RF Exposure Compliance and Control Guidelines and Operating Instructions

"To control your exposure and ensure compliance with the occupational/controlled environment exposure limits always adhere to the following procedures:

Guidelines:

-Do not remove the RF Exposure Label from the device.

-User awareness instructions must accompany device when transferred to other users.

-Do not use this device if the operational requirements described herein are not met.

Operating Instructions:

-Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-to-Talk (PTT) button. To receive calls, release the PTT button. Transmitting 50% of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring compliance).

-Hold the radio in a vertical position in front of the face with the microphone (and the other parts of the radio, including the antenna) at least one inch away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. Antenna should be kept away from the eyes.

-When worn on the body, always place the radio in a BK Radio approved clip, holder, holster, case, or body harness for this product. Using approved

body-worn accessories is important because the use of BK Radio or other manufacturer's non-approved accessories may result in exposure levels which exceed the FCC's occupational/controlled environment RF exposure limits.

-If not using a body-worn accessory and are not using the radio in the intended use position in front of the face, then ensure the antenna and the radio are kept at least one inch from the body when transmitting. Keeping the radio at the proper distance is important because RF exposures decrease with increasing distance from the antenna.

-Use only BK Radio approved, supplied or replacement antennas, batteries, and accessories. Use of non-BK Radio approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines.

-For a list of BK Radio approved accessories visit the following website: http://www.relm.com ."

More information on RF exposure may also be found on these websites:

www.fcc.gov/oet/rfsafety/rf-faqs.html

www.osha.gov/SLTC/radiofrequencyradiation/index.html

From a paper entitled, "Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields", the following observations are made, "Hand-held 2-way portable radios such as walkie-talkies are low-powered devices used to transmit and receive messages over relatively short distances. Because of the relatively low power levels used (usually no more than a few watts) and, especially, because of the intermittency of transmissions (low duty factor) these radios would normally not be considered to cause hazardous exposures to users. Laboratory measurements have been made using hand-held radios operating at various frequencies to determine the amount of RF energy that might be absorbed in the head of a user. In general, the only real possibility of a potential hazard would occur in the unlikely event that the tip of the transmitting antenna were to be placed directly at the surface of the eye, contrary to manufacturer's recommended precautions, or if for some reason continuous exposure were possible over a significant period of time, which is unlikely. If hand-held radios are used properly, there is no evidence that they could cause hazardous exposure to RF energy."

Gary Riedmiller's Photo Gallery
From the 2007 Fire Season

Heavy Airtanker Drop on the Madera Fire

Bucket Work on the Mule Mountain Fire

State Engine 361 parked between several Forest Service Engines on the Madera Fire.

Madera Fire on the Coronado National Forest

Typical fire behavior on the Buena Fire.

Ike Isakson on the Buena Fire

Active fire behavior on the Buena Fire.

Mule Mountain ICP.

Gary Riedmiller on Mule Mtn. Fire.

Engine personnel walking to the East Flank of the Madera Fire.

Arizona State Forestry employee, Karl Sieglaff, on the Mule Mountain Fire.

Gary Riedmiller takes a well-deserved break on the Buena Fire.

Arizona State Forestry employee, Todd Foster, scouting the Black Knob Fire. State Engine 361 is in the background.

Engine 361 personnel determining land ownership on the Black Knob Fire. The fire can be seen directly above Todd Foster's red hard hat.

Karl Sieglaff securing the Mule Mountain Fire.